ICTS REGION 2 REPORT

By the Region 2 (the Americas) Coordinator:

Mr. Guy Williams

Air Force Test Center, Edwards Air Force Base, State of California, United States of America, and

Mr. Sergio Penna

Embraer Sociedade Anônima, Brazil

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The International Consortium for Telemetry Spectrum

www.TelemetrySpectrum.org

Spectrum Demand Update

Global mobile data traffic grew 71 percent in 2017

Mobile data traffic has grown 17-fold over the past 5 years
Smartphones (including phablets) represented 88% of total mobile traffic
North America 23% growth in 2017

Mobile video traffic accounted for 59 percent of total mobile data traffic in 2017

Mobile video traffic now accounts for more than half of all mobile data traffic

Nearly Six hundred and fifty million mobile devices and connections were added in 2017

Global mobile devices and connections in 2017 grew to 8.6 billion, up from 7.9 billion in 2016.

Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017-2022 (February, 2019)

Spectrum Demand
By 2022

- Global mobile data traffic will increase seven-fold between 2017 and 2022
- Mobile will represent 20 percent of total IP traffic
- Smartphones will surpass 90 percent of mobile data traffic
- Nearly four-fifths of the world's mobile data traffic will be video
- 4G will be 54 percent of connections, but 71 percent of total traffic
- 5G will be 3.4 percent of connections but 11.8 percent of total traffic
- The average 5G connection will generate nearly 3 times more traffic than the average 4G connection

Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017-2022 (February, 2019)

Meeting 5G Spectrum Demands

Why 5G?

- High Bandwidth (greater than 1Gps), broader coverage, and ultra-low latency
- Enhanced power efficiency
- Massive IoT connection density and dynamic allocation of resources based on awareness of content
- Support autonomous cars, virtual reality, factory robotics

Economics driving 5G in US

- Up to 3 million new jobs
- $275 billion in private sector network investment
- $500 billion added to the GDP

Meeting 5G Spectrum Demands

High- Band

FCC auctioning high-band, millimeter-wave spectrum

- Auction just completed for 28 GHz; generated $702 million
- Auction started March 14 for 24 GHz band
- Auction later in the year for Upper 37 GHz, 39 GHz, and 47 GHz
- FCC will free up another 2.75 gigahertz of 5G spectrum in 26 and 42 GHz bands.

Meeting 5G Spectrum Demands

Mid-band

- Mid-band provides coverage and capacity
- Bands in play: 2.5 GHz, 3.5 GHz, 3.7-4.2 GHz, 5 GHz

Low-band

- Changes to 600 MHz, 800 MHz, and 900 MHz rules to facilitate mobile broadband

Unlicensed

- Additional spectrum for Wi-Fi in 6 GHz and above 95 GHz.

(Auctions will release ~5 gigahertz of 5G spectrum -- more than all other flexible use bands combined)

US Spectrum Policy

Presidential Memorandum Oct 2018

Section 4. ***National Spectrum Strategy***: Within 270 days, Secretary (in consultation with other agencies) to report long-term National Spectrum Strategy to:

(a) increase spectrum access for all users, including on a shared basis . . . ;

(b) create flexible models for spectrum management, promote efficient and effective spectrum use while accounting for critical safety and security concerns;

(c) develop advanced technologies, . . . and spectrum-sharing tools and techniques to increase spectrum access . . . ;

(d) build secure, automated capability to assess spectrum use and expedite coordination of shared access among Federal and non-Federal spectrum stakeholders; . . . .

US Spectrum Legislation

MOBILE NOW Act requires 255 MHz of Federal and non-Federal spectrum to be identified for wireless broadband by December 2022

- 100 MHz licensed (below 6 GHz) and 100 MHz unlicensed (below 8 GHz and subject to potential continued use by incumbent Federal entities in designated geographic areas), plus 55 MHz licensed or unlicensed below 8 GHz

- Spectrum in process of relocation; 1695-1710, 1755-1780, 2155-2180, and 3550-3700 MHz not counted toward the 255 MHz

US Spectrum Legislation

Spectrum Pipeline Act requires FCC to

- report to Congress on results of rule changes for the 3550-3700 MHz band,
- and proposals to identify at least 1 gigahertz in additional spectrum between 6 GHz and 57 GHz that can be shared between incumbent uses and new licensed and unlicensed services.

US and International

On reconciliation of potential interference issues between IMT and broadcast satellite operations in the band 1452-1492 MHz, an Inter-American Proposal against expansion to Region 2 was secured.

- unlikely that other administrations will be seek to undermine 1452-1492 MHz protections for AMT in our Region
- issue to be resolved at the Conference (WRC 2019 agenda item 9.1.2)

US and International

- Difference of view looming between the U.S. ‘no change’ position on use of the 6 GHz band for HAPS (high altitude platform systems, Agenda Item 1.14), and other administrations seeking to globalize allocation of the band 6440-6520 MHz for downlinks

- U.S. HAPS position consistent with AMT requirements-- but FCC proposal for use of 5925-6425 MHz for unlicensed WiFi handicaps AMT ability to access the band domestically/politically.

US and International

- IMT operations in Lower S-Band. Agenda item 9.1.1 considers compatibility issues between the terrestrial component of IMT (International Mobile Telecommunications) and the satellite component of IMT

- Frequency bands include 1980-2010 MHz and 2170-2200 MHz

- Many administrations operate AMT system in the adjacent lower S-Band (2200-2300 MHz)

- Monitor to ensure there is no increase in interference with AMT systems operating in the lower S-Band with the adjacent band

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14. ABSTRACT

Region 2 report includes the current spectrum demands in the US including the commercial 5G spectrum needs. The current challenges to Telemetry spectrum needs for test and evaluation in the US and an overview of Telemetry related agenda items for the upcoming World Radio Conference (WRC) 19.

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